

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Independent 1-10V

Xitanium Dim 100W 0.7A 1-10V TWE I220

9290 014 02806

Xitanium LED-based light sources are an excellent solution for outdoor environment. They are long-lasting and require low maintenance. However, to get the best out of the LEDs, these light sources require highly reliable and efficient LED Drivers. The new Philips Xitanium Fixed Output and Dimmable (1-10V) LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

Benefits

- Robust design; capable of withstanding harsh outdoor conditions.
- Long lifetime and high survival rate.
- Superior thermal management suitable for outdoor application.
- Backed by 5 year warranty from a company you can trust.
- Component integration in advanced IC enables cost effective design.
- Proven robustness & reliability secure the lowest luminaire maintenance over time.
- Easy to design-in based on the good thermal management and extra EMI margin

Features

- Proven robustness and reliable electronic driver design.
- 1-10V dimming interface for flexible dimming solutions.
- Achieving highest efficiencies based on advanced technology.
- Long lifetime @ high temperatures.
- High surge immunity.
- Extreme compact size, fitting with varied and critical luminaires.

Application

- Residential areas
- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	110...277	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency range	47...63	Hz	Performance range
Rated input current	0.41	A	@ rated output power @ rated input voltage
Max. input current	1.03	A	@ rated output power @ minimum performance input voltage
Rated input power	112	W	@ rated output power @ rated input voltage
Power factor	0.95		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	≥ 91	%	@ rated output power @ rated input voltage
Input voltage AC range	99...305	V _{ac}	Operational range
Input frequency AC range	45...66	Hz	Operational range
Isolation input to output	Basic		

Electrical output data

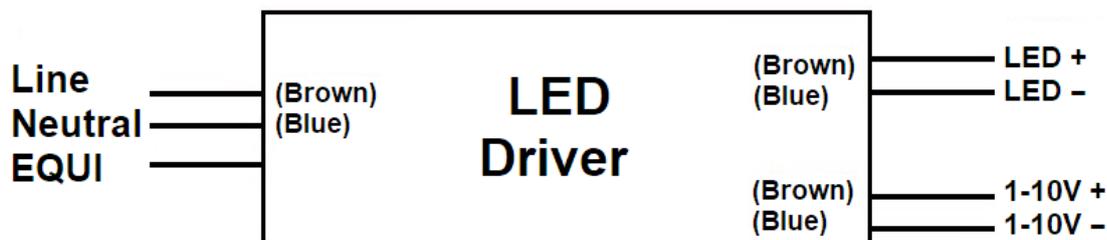
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	71...143	V _{dc}	
Output voltage max.	210	V	Maximum output voltage (rms)
Output current	0.7	A	
Output current min dimming	70	mA	
Output current tolerance ±	5	%	
Output current ripple LF	≤ 5	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	
Output power	5...100	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	1-10V		Output current amplitude dimming
Dimming range	10...100	%	Default range
Isolation controls input to output	Basic		acc. IEC61347-1

Wiring and Connections

Specification item	Value	Unit	Type
Input wire cross-section	1 / 17	mm ² / AWG	3x 1.0mm ² stranded wires, waterproof cable
Output wire cross-section	1 / 17	mm ² / AWG	2x 1.0mm ² stranded wires, waterproof cable

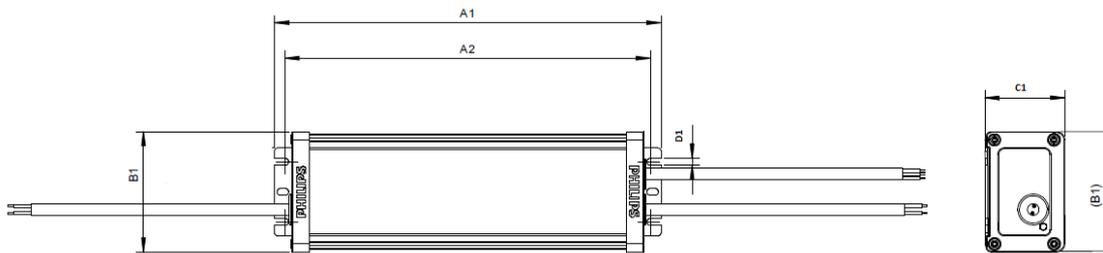


Insulation

Insulation per IEC61347-1	Mains	1-10V	LED	Housing
Mains		Basic	Basic	Basic
1-10V	Basic		Basic	Basic
LED	Basic	Basic		Basic
Housing	Basic	Basic	Basic	

Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	220	mm	
Mounting hole distance (A2)	207	mm	
Width (B1)	68.2	mm	
Height (C1)	45	mm	
Mounting hole diameter (D1)	4	mm	
Weight	910	gram	



Logistical data

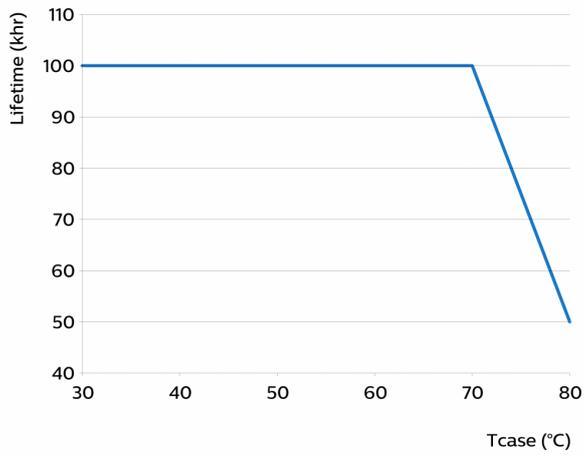
Specification item	Value
Product name	Xitanium Dim 100W 0.7A 1-10V TWE I220
Logistic code 12NC	9290 014 02806
Pieces per box	10

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-40...+55	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
T _{case-max}	80	°C	Maximum temperature measured at T _{case-point}
T _{case-life}	70	°C	Measured at T _{case-point}
Maximum housing temperature	110	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-max. Maximum failures = 10%



Storage temperature and humidity

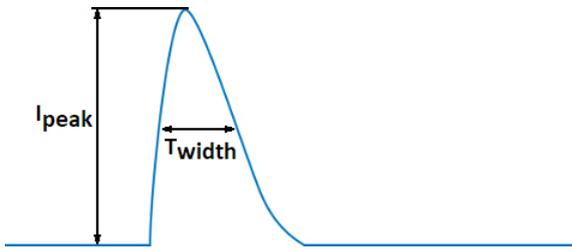
Specification item	Value	Unit	Condition
Ambient temperature	-40...+80	°C	
Relative humidity	5...95	%	Non-condensing

Features

Specification item	Value	Condition
Open load protection	Yes	Automatic recovering
Short circuit protection	Yes	Automatic recovering
Over power protection	Yes	Automatic recovering
Hot wiring	No	
Suitable for fixtures with protection class	I	per IEC60598
Overtemperature protection	Yes	Automatic recovering

Inrush current

Specification item	Value	Unit	Condition
Inrush current I_{peak}	48	A	Input voltage 230V
Inrush current T_{width}	460	μ s	Input voltage 230V, measured at 50% I_{peak}
Drivers / MCB 16A type B	≤ 11	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

Driver touch current / protective conductor current

Specification item	Value	Unit	Condition
Typical Protective Conductor Current (ins. Class I)	0.5	mA rms	Acc. IEC60598-1. LED module contribution not included

Surge immunity

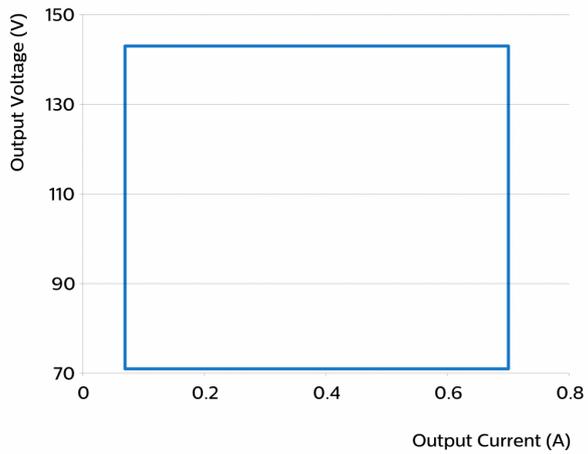
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	4	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	4	kV	Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us

Application Info

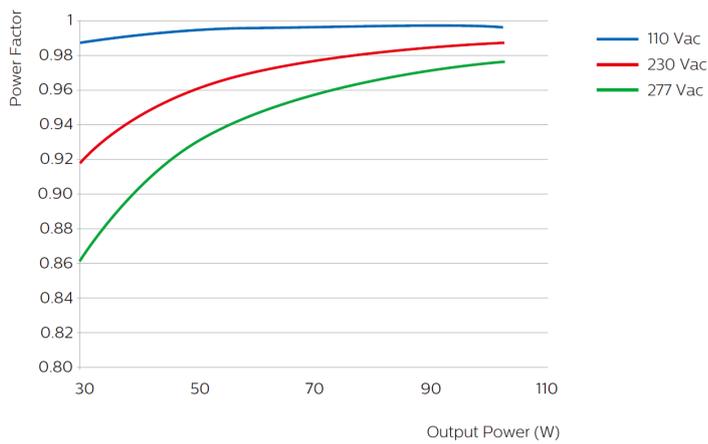
Specification item	Value
Approval marks	CB / CCC / CE / CSA / ENEC / UL 1310
Ingress Protection classification (IP)	66/67
Application	Outdoor
Mounting Type	Independent

Graphs

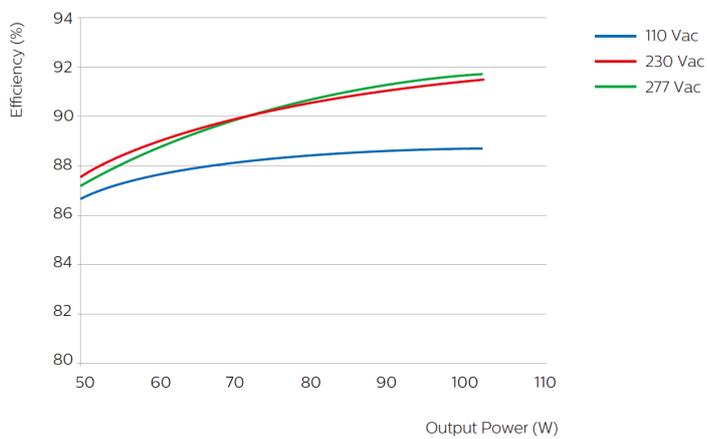
Operating window



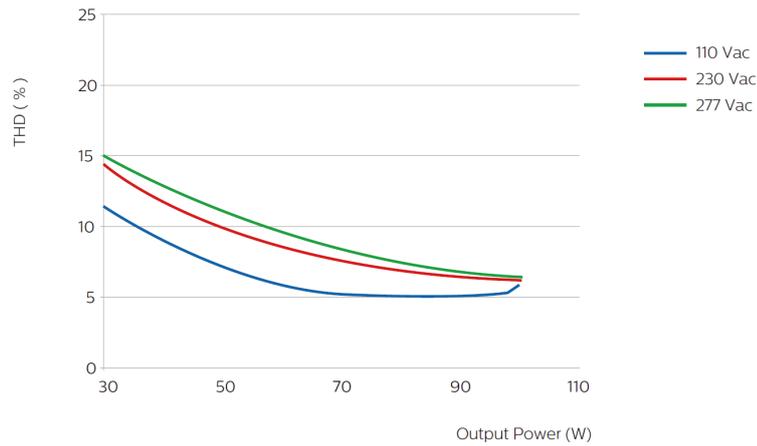
Power factor versus output power



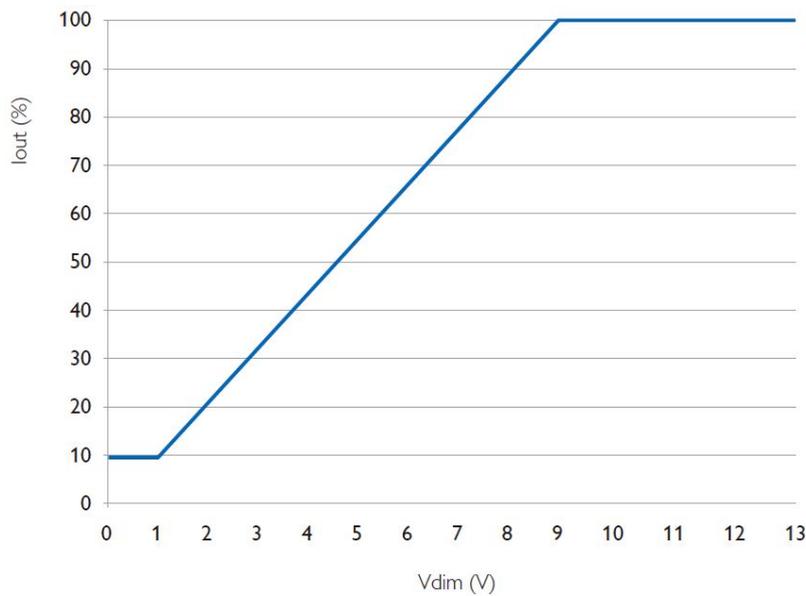
Efficiency versus output power



THD versus output power



I_{out} as function of 1-10V interface



Notes

Input & Output cable length: 450 +/- 30mm
1-10V control cable length: 300 +/- 30mm
Voltage rating 300/500V



©2021 Signify Holding, IBRS 10461, 5600 VB, NL. All rights reserved.
UK importer address: Signify Commercial UK Limited, 3, Guildford Business Park, GU2 8XG.

The information provided herein is subject to change without notice. Signify does not give any representation or warranty as to the accuracy or completeness of the information included herein and shall not be liable for any action in reliance thereon. The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract, unless otherwise agreed by Signify.

Philips and the Philips Shield Emblem are registered trademarks of Koninklijke Philips N.V. All other trademarks are owned by Signify Holding or their respective owners.

Date of release: March 18, 2021 v2

www.philips.com/oem